

PATENT  
Attorney Docket No. 08157.0018  
CUSTOMER NUMBER 22,852

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Continuation of: )  
)  
International Patent Application No. ) Group Art Unit: Unassigned  
PCT/IE00/00097 )  
) Examiner: Unassigned  
Inventors: David VALE et al. )  
)  
Serial No.: Not Yet Assigned )  
)  
Filed: January 14, 2002 )  
  
For: RETRIEVAL DEVICE

**Assistant Commissioner for Patents  
Washington, DC 20231**

**BOX: PATENT APPLICATIONS**

Sir:

**PRELIMINARY AMENDMENT**

Prior to examination, please amend the above-identified application as follows:

**IN THE SPECIFICATION:**

Page 1, after the title, please insert the following new sub-title and paragraph

--CROSS REFERENCE RELATED APPLICATIONS

This application is a continuation of international application number  
PCT/IE00/00097, filed August 11, 2000, and claims the priority of International Patent  
Application No. PCT/IE99/00082, filed August 12, 1999, the contents of both of which  
are incorporated herein by reference. --

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**IN THE CLAIMS:**

Please cancel claims 32 and 48, and amend claims 1-2, 4-8, 10-12, 17-20, 22-27, 29-30, 33, 34, 36-39, and 42-47 as follows:

1. (Amended) A retrieval device for retrieving a medical device from a body lumen, through a lesion or a treatment device proximal of the medical device, the retrieval device comprising:
  - a retrieval catheter having a proximal end and a distal end, the retrieval catheter defining a retrieval space into which a medical device is retrieved; and
  - a centring element having an introduction configuration for introduction of the retrieval device through a lesion or a treatment device and a retrieval configuration in which the medical device is retrieved into the retrieval space of the retrieval catheter.
2. (Amended) A retrieval device as claimed in claim 1 wherein the centring element is a centring catheter having a distal end, the centring catheter being mounted in the retrieval catheter for movement between the introduction configuration in which the distal end of the centring catheter projects distally from the distal end of the retrieval catheter and the retrieval configuration in which the distal end of the centring catheter is proximal of the retrieval space of the retrieval catheter.
4. (Amended) A retrieval device as claimed in claim 2 wherein the centring catheter is slidably movable in the retrieval catheter from the introduction configuration to the retracted retrieval configuration.

5. (Amended) A retrieval device as claimed in claim 2 wherein the centring catheter is removable from the retrieval catheter.
6. (Amended) A retrieval device as claimed in claim 2 wherein a proximal end of the centring catheter extends proximally from the proximal end of the retrieval catheter for external manipulation of the centering catheter relative to the retrieval catheter.
7. (Amended) A retrieval device as claimed in claim 2 wherein the distal end of the centring catheter is tapered distally inwardly to guide the open mouth through the body lumen.
8. (Amended) A retrieval device as claimed in claim 2 wherein the distal end of the centering catheter is shaped to provide a smooth transition between the distal end of the centring catheter and the distal end of the retrieval catheter.
10. (Amended) A retrieval device as claimed in claim 8 wherein the distal end of the centring catheter is flexible.
11. (Amended) A retrieval device as claimed in claim 8 wherein the distal end of the centring catheter is sealably engagable to the distal end of the retrieval catheter.
12. (Amended) A retrieval device as claimed in claim 1 wherein the retrieval catheter has a main catheter body and the centring element is a tapered distal extension of the main body of the retrieval catheter, the tapered distal extension having an open mouth through which a medical device is retrieved.
17. (Amended) A retrieval device as claimed in claim 12 wherein the tapered distal extension is flexible with respect to the main body of the retrieval catheter.

18. (Amended) A retrieval device as claimed in claim 1 wherein the distal end of the centring element is at least partially radiopaque.
19. (Amended) A retrieval device as claimed in claim 1 wherein the centring element is of or coated with a material having a low coefficient of friction.
20. (Amended) A retrieval device as claimed in claim 1 wherein the retrieval catheter has a radially expansible tip at the distal end to accommodate retrieval of a medical device into the retrieval system.
22. (Amended) A retrieval device as claimed in claim 20 wherein the tip has sufficient axial stiffness to assist the retrieval of a medical device.
23. (Amended) A retrieval device as claimed in claim 1 wherein the diameter of the retrieval catheter varies along its length.
24. (Amended) A retrieval device as claimed in claim 1 wherein the distal end of the retrieval catheter is tapered distally inwardly to provide a smooth crossing profile for the retrieval device.
25. (Amended) A retrieval device as claimed in claim 1 wherein the medical device is mounted on or engaging with a guidewire and wherein the guidewire is pulled proximally for retrieval of the medical device into the retrieval space.
26. (Amended) A retrieval device as claimed in claim 23 wherein the medical device is an embolic filter device which is mounted or engagable with a guidewire for retrieval into the retrieval space.
27. (Amended) A retrieval device as claimed in claim 2 wherein at least one of the inner surface of the retrieval catheter and the outer surface of the centring catheter is of non-circular profile over at least portion of the length thereof.

29. (Amended) A retrieval device as claimed in claim 27 wherein the catheter periphery is of oval shape.
30. (Amended) A retrieval device as claimed in claim 27 wherein the catheter periphery is shaped to define a number of separate areas of contact with the other catheter.
33. (Amended) A method for retrieval of a medical device from a body lumen comprising the steps of:

introducing a retrieval catheter with a centring element into a body lumen, the retrieval catheter defining a retrieval space, and the centring element having an introduction configuration for introduction of the retrieval catheter and a retrieval configuration for retrieving a medical device;

advancing the retrieval catheter across a lesion or a treatment device with the centring element in the introduction configuration;

advancing the retrieval catheter distally to the proximal end of the medical device;

retrieving the medical device into the retrieval catheter with the centring element in the retrieval configuration; and

removing the retrieval catheter and the retrieval medical device from the body lumen.

34. (Amended) A method as claimed in claim 33 wherein the centring element is a centring catheter and the method includes the step of moving the centring catheter from an introduction configuration in which the distal end of the centring

catheter projects distally from the retrieval catheter for crossing a lesion or a treatment device and a retrieval configuration in which the centring catheter is proximal of the retrieval space for retrieving the medical device.

36. (Amended) A method as claimed in claim 34 wherein the distal end of the retrieval catheter expands radially outwardly during retrieval of the medical device into the retrieval catheter.
37. (Amended) A method as claimed in claim 34 wherein the distal end of the retrieval catheter expands radially outwardly during retraction of the distal end of the centring catheter into the retrieval catheter.
38. (Amended) A method as claimed in claim 34 wherein the distal end of the centring catheter is deformed as the distal end of the centring catheter is retracted into the retrieval catheter.
39. (Amended) A method is claimed in claim 33 wherein the retrieval catheter has a main catheter body, the centring element is a tapered distal extension of the main body of the retrieval catheter and the tapered distal extension has an open mouth through which a medical device is retrieved.
42. (Amended) A method as claimed in claim 34 including the step of at least one of flushing and aspirating before retrieving the medical device into the retrieval catheter.
43. (Amended) A method as claimed in claim 42 including the step of removing the centring catheter from the retrieval catheter to facilitate at least one of flushing and aspiration.

44. (Amended) A method as claimed in claim 34 wherein the medical device is retrieved into the retrieval catheter by drawing the medical device proximally into the retrieval catheter.
45. (Amended) A method as claimed in claim 34 wherein the medical device is retrieved into the retrieval catheter by advancing the retrieval catheter distally over the device.
46. (Amended) A method as claimed in claim 34 wherein the centring catheter is removed from the body lumen before removing the retrieval catheter and the medical device from the body lumen.
47. (Amended) A method as claimed in claim 34 wherein the medical device is an embolic filter device.

#### **CLAIM AMENDMENTS**

Applicants submit the attached claims with brackets and underlining for the Examiner's convenience as required by new rule 37 C.F.R. 1.121 (c)(1)(ii). This paper is not intended to be entered.

#### **REMARKS**

The presentation of a clean set of claims is permitted under new rule 37 C.F.R. §1.121 (c)(3), effective November 7, 2000. An amended form of claims 1-2, 4-8, 10-12, 17-20, 22-27, 29-30, 33, 34, 36-39, and 42-47 is attached for the Examiner's convenience pursuant to new rule 37 C.F.R. §1.21(c)(1)(ii). No new matter has been introduced by these amendments.

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The examiner is respectfully requested to consider the above preliminary amendment prior to examination of the application.

If there are any fees due in connection with the filing of this amendment, please charge the fees to Deposit Account No. 06-0916. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our deposit account.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
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Dated: January 14, 2002

By:   
Ernest F. Chapman  
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EFC/FPD/peg

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**ANNEXES**

1. A retrieval device for retrieving a medical device from a body lumen, through a lesion or a treatment device proximal of the medical device, the retrieval device comprising:
  - a retrieval catheter having a proximal end and a distal end, the retrieval catheter defining a retrieval space into which a medical device is retrieved; and
  - a centring [means] element having an introduction configuration for introduction of the retrieval device through a lesion or a treatment device and a retrieval configuration in which the medical device is retrieved into the retrieval space of the retrieval catheter.
2. A retrieval device as claimed in claim 1 wherein the centring [means] element is a centring catheter having a distal end, the centring catheter being mounted in the retrieval catheter for movement between the introduction configuration in which the distal end of the centring catheter projects distally from the distal end of the retrieval catheter and the retrieval configuration in which the distal end of the centring catheter is proximal of the retrieval space of the retrieval catheter.
4. A retrieval device as claimed in claim 2 [or 3] wherein the centring catheter is slidably movable in the retrieval catheter from the introduction configuration to the retracted retrieval configuration.
5. A retrieval device as claimed in [any of claims 2 to 4] claim 2 wherein the centring catheter is removable from the retrieval catheter.

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6. A retrieval device as claimed in [any of claims 2 to 5] claim 2 wherein a proximal end of the centring catheter extends proximally from the proximal end of the retrieval catheter for external manipulation of the centering catheter relative to the retrieval catheter.
7. A retrieval device as claimed in [any of claims 2 to 6] claim 2 wherein the distal end of the centring catheter is tapered distally inwardly to guide the open mouth through the body lumen.
8. A retrieval device as claimed in [any of claims 2 to 6] claim 2 wherein the distal end of the centering catheter is shaped to provide a smooth transition between the distal end of the centring catheter and the distal end of the retrieval catheter.
10. A retrieval device as claimed in claim 8 [or 9] wherein the distal end of the centring catheter is flexible.
11. A retrieval device as claimed in [any of claims 8 to 10] claim 8 wherein the distal end of the centring catheter is sealably engagable to the distal end of the retrieval catheter.
12. A retrieval device as claimed in claim 1 wherein the retrieval catheter has a main catheter body and the centring [means] element is a tapered distal extension of the main body of the retrieval catheter, the tapered distal extension having an open mouth through which a medical device is retrieved.
17. A retrieval device as claimed in [any of claims 12 to 16] claim 12 wherein the tapered distal extension is flexible with respect to the main body of the retrieval catheter.

18. A retrieval device as claimed in [any preceding] claim 1 wherein the distal end of the centring [means] element is at least partially radiopaque.
19. A retrieval device as claimed in [any preceding] claim 1 wherein the centring [means] element is of or coated with a material having a low coefficient of friction.
20. A retrieval device as claimed in [any preceding] claim 1 wherein the retrieval catheter has a radially expansible tip at the distal end to accommodate retrieval of a medical device into the retrieval system.
22. A retrieval device as claimed in claim 20 [or 21] wherein the tip has sufficient axial stiffness to assist the retrieval of a medical device.
23. A retrieval device as claimed in [any preceding] claim 1 wherein the diameter of the retrieval catheter varies along its length.
24. A retrieval device as claimed in [any preceding] claim 1 wherein the distal end of the retrieval catheter is tapered distally inwardly to provide a smooth crossing profile for the retrieval device.
25. A retrieval device as claimed in [any preceding] claim 1 wherein the medical device is mounted on or engaging with a guidewire and wherein the guidewire is pulled proximally for retrieval of the medical device into the retrieval space.
26. A retrieval device as claimed in claim 23 wherein the medical device is an embolic filter device which is mounted or engagable with [on] a guidewire for retrieval into the retrieval space.
27. A retrieval device as claimed in [any of claims 2 to 11 and 18 to 26] claim 2 wherein at least one of the inner surface of the retrieval catheter and[/or] the

outer surface of the centring catheter is of non-circular profile over at least portion of the length thereof.

29. A retrieval device as claimed in claim 27 [or 28] wherein the catheter periphery is of oval shape.
30. A retrieval device as claimed in [any of claims 27 to 29] claim 27 wherein the catheter periphery is shaped to define a number of separate areas of contact with the other catheter.
33. A method for retrieval of a medical device from a body lumen comprising the steps of:

introducing a retrieval catheter with a centring [means] element into a body lumen, the retrieval catheter defining a retrieval space, and the centring [means] element having an introduction configuration for introduction of the retrieval catheter and a retrieval configuration for retrieving a medical device;

advancing the retrieval catheter across a lesion or a treatment device with the centring [means] element in the introduction configuration;

advancing the retrieval catheter distally to the proximal end of the medical device;

retrieving the medical device into the retrieval catheter with the centring [means] element in the retrieval configuration; and

removing the retrieval catheter and the retrieval medical device from the body lumen.

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34. A method as claimed in claim 33 wherein the centring [means] element is a centring catheter and the method includes the step of moving the centring catheter from an introduction configuration in which the distal end of the centring catheter projects distally from the retrieval catheter for crossing a lesion or a treatment device and a retrieval configuration in which the centring catheter is proximal of the retrieval space for retrieving the medical device.
36. A method as claimed in claim 34 [or 35] wherein the distal end of the retrieval catheter expands radially outwardly during retrieval of the medical device into the retrieval catheter.
37. A method as claimed in [any of claims 34 to 36] claim 34 wherein the distal end of the retrieval catheter expands radially outwardly during retraction of the distal end of the centring catheter into the retrieval catheter.
38. A method as claimed in [any of claims 34 to 37] claim 34 wherein the distal end of the centring catheter is deformed as the distal end of the centring catheter is retracted into the retrieval catheter.
39. A method is claimed in claim 33 wherein the retrieval catheter has a main catheter body, the centring [mean] element is a tapered distal extension of the main body of the retrieval catheter and the tapered distal extension has an open mouth through which a medical device is retrieved.
42. A method as claimed in [any of claims 34 to 41] claim 34 including the step of at least one of flushing and/[or] aspirating before retrieving the medical device into the retrieval catheter.

43. A method as claimed in claim 42 including the step of removing the centring catheter from the retrieval catheter to facilitate at least one of flushing and[/or] aspiration.
44. A method as claimed in [any of claims 34 to 43] claim 34 wherein the medical device is retrieved into the retrieval catheter by drawing the medical device proximally into the retrieval catheter.
45. A method as claimed in [any of claims 34 to 43] claim 34 wherein the medical device is retrieved into the retrieval catheter by advancing the retrieval catheter distally over the device.
46. A method as claimed in [any of claims 34 to 45] claim 34 wherein the centring catheter is removed from the body lumen before removing the retrieval catheter and the medical device from the body lumen.
47. A method as claimed in [any of claims 34 to 46] claim 34 wherein the medical device is an embolic filter device.

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